

In the claims

Claim 1. (Currently Amended) A liposome having a bilayer comprising a lipid component which comprises a compound having the formula



R^1 is a straight-chained alkyl, alkenyl or alkynyl group having from 5 to 19 carbon atoms in the aliphatic chain;

Y^1 is $-CH=CH-$, $-C\equiv C-$ or $-CH(OH)CH(OH)-$;

Z^1 is OH or a conversion-inhibiting group;

Y^2 is H, a phenyl group, an alkyl-substituted phenyl group having from 1 to about 6 carbon atoms in the alkyl chain, or an alkyl chain having from 1 to 6 carbon atoms;

Y^3 is H or a group having the formula $-C(O)R^2$ or $-S(O)_2R^2$;

R^2 is a straight-chained alkyl moiety selected from the group consisting of $-(CH_2)_3CH_3$, $-(CH_2)_5CH_3$, $-(CH_2)_7CH_3$ and $-(CH_2)_9CH_3$, or an alkenyl group or alkynyl group having from 2 to 23 carbon atoms in the aliphatic chain;

Z^2 is OH or a phosphorylcholine attachment-inhibiting group selected from the group consisting of $-X^1$, $-OX^1$, $-X^2 X^3$ and $-OX^2X^3$;

X^1 is selected from the group consisting of $-C(O)H$, $-CO_2H$, CH_3 , $C(CH_3)_3$, $Si(CH_3)_3$, $SiCH_3(C(CH_3)_3)_2$, $Si(C(CH_3)_3)_3$, $Si(PO_4)_2C(CH_3)_3$, a phenyl group, an alkyl-substituted phenyl group having from 1 to 6 carbon atoms in the alkyl chain, an alkyl chain having from 1 to 6 carbon atoms, an amino group, a fluorine atom, a chlorine atom, and a group having the formula $C(R^3R^4)OH$;

X^2 is selected from the group consisting of CH_2- , $C(CH_3)_2-$, $Si(PO_4)_2-$, $Si(CH_3)_2-$, $SiCH_3PO_4-$, $C(O)-$ and $S(O)_2-$;

X^3 is selected from the group consisting of -C(O)H, -C₀H, -CH₃, -C(CH₃)₃, -Si(CH₃)₃, -SiCH₃(C(CH₃)₃)₂, -Si(C(CH₃)₃)₃, -Si(PO₄)₂C(CH₃)₃, a phenyl group, an alkyl-substituted phenyl group having from 1 to 6 carbon atoms in the alkyl chain, an alkyl chain having from 1 to 6 carbon atoms, an amino moiety, a chlorine atom, a fluorine atom, or a group having the formula C(R³R⁴)OH, wherein each of R³ and R⁴ is independently an alkyl chain having from 1 to 6 carbon atoms, a phenyl group or an alkyl-substituted phenyl group having from 1 to 6 carbon atoms in the alkyl chain;

wherein when Z² is an amino group, R² is an aliphatic chain having from 12 to 9 or from 19 to 23 carbon atoms in the aliphatic chain;

and wherein the compound comprises at least about 5 mole percent of the lipid component.

Claim 2. (Original) The liposome of claim 1, wherein R¹ is CH₃(CH₂)₁₂-, Y¹ is -CH=CH- and Y² is H.

Claim 3. (Original) The liposome of claim 1, wherein Y³ is -C(O)(CH₂)₄CH₃.

Claim 4. (Original) The liposome of claim 1, wherein the conversion-inhibiting group is -OSi(CH₃)₂C(CH₃)₃.

Claim 5. (Original) The liposome of claim 1, wherein the compound has the formula CH₃(CH₂)₁₂-CH=CH-CH₂Z¹-CH(NHY³)-CH₂-Z².

Claim 6. (Currently Amended) The liposome of claim 5, wherein Y³ is -C(O)(CH₂)₄CH₂CH₃ and wherein Z² is -OC(O)CH₃, -OC(O)CH₂CH₂CH₃, -OC(O)CH(CH₃)CH₃, or -OSi(CH₃)₂C(CH₃)₃.

Claim 7. (Original) The liposome of claim 1, wherein the compound comprises at least about 10 mole percent of the lipid.

Claim 8. (Original) The liposome of claim 1 comprising an additional bioactive agent.

Claim 9. (**Currently Amended**) The liposome of claim 1, wherein the lipid further comprises vitamin D³.

Claim 10. (**Original**) The liposome of claim 9, wherein vitamin D³ comprises about 1 mole percent of the lipid.

Claim 11. (**Original**) The liposome of claim 1, wherein the lipid further comprises a headgroup modified lipid.

Claim 12. (**Original**) The liposome of claim 1 which is dehydrated.

Claim 13. (**Currently Amended**) A pharmaceutical composition comprising the liposome of claim 1.

Claim 14. (**Original**) A method of administering a bioactive liposome to an animal which comprises administering to the animal the pharmaceutical composition of claim 13.

Claim 15. (**Original**) The method of claim 14, wherein the animal is afflicted with a cancer and wherein the amount of the composition administered comprises at least about 0.1 mg of the compound per kg of the animal's body weight.

Claims 16-78. (**Canceled**)

Claim 79. (**Previously Presented**) The method of claim 15, wherein the cancer is a brain, breast, lung, ovarian, colon, stomach or prostate cancer.

Claim 80. (**Previously Presented**) The method of claim 15, wherein the cancer is a sarcoma, carcinoma, neuroblastoma, glioma or drug resistant cancer

Claim 81. (**Previously Presented**) The method of claim 14, wherein the animal is a human.

Claim 82. (**Previously Presented**) The liposome of claim 1, wherein Z¹ is OH or a conversion-inhibiting group selected from the group consisting of -X1, -OX¹, -X²X³ and -OX²X³.

Claim 83. (**Previously Presented**) The liposome of claim 1, wherein R² is an alkyl moiety selected from the group consisting of -(CH₂)₃CH₃, -(CH₂)₅CH₃, -(CH₂)₇CH₃ and -(CH₂)₉CH₃.

Claim 84. (**Previously Presented**) The liposome of claim 1, wherein R¹ is CH₃(CH₂)₁₂-.

Claim 85. (**Previously Presented**) The liposome of claim 1, wherein Y¹ is -CH=CH-.

Claim 86. (**Previously Presented**) The liposome of claim 1, wherein Y² is H.

Claim 87. (**Previously Presented**) The liposome of claim 1, wherein Y³ is -C(O)R².

Claim 88. (**Previously Presented**) The liposome of claim 1, wherein Z¹ is OH.

Claim 89. (**Previously Presented**) The liposome of claim 88, wherein Z² is a group having the formula -X²X³ or -O-X²X³.

Claim 90. (**Previously Presented**) The liposome of claim 89, wherein Z² is -OC(O)CH₃, -OC(O)CH₂CH₂CH₃, -OC(O)CH(CH₃)CH₃ or -OSi(CH₃)₂C(CH₃)₃.

Claim 91. (**Previously Presented**) The liposome of claim 90, wherein Z² is -OSi(CH₃)₂C(CH₃)₃.

Claim 92. (**Previously Presented**) The liposome of claim 88, wherein Z² is a group having the formula -X¹ or -OX¹.

Claim 93. (**Previously Presented**) The liposome of claim 1, wherein Z¹ a conversion-inhibiting group selected from the group consisting of -X¹, -OX¹, -X²X³ and -OX²X³.

Claim 94. (**Previously Presented**) The liposome of claim 93, wherein the conversion-inhibiting group is -OC(O)CH₃, -OC(O)CH₂CH₂CH₃, -OC(O)CH(CH₃)CH₃ or -OSi(CH₃)₂C(CH₃)₃.

Claim 95. (**Previously Presented**) The liposome of claim 1, wherein the compound having the formula R¹-Y¹-CHZ¹-CH(NY²Y³)-CH₂-Z² is CH₃-(CH₂)₁₂-CH=CH-CH₂Z¹CH(NHY³)-CH₂Z².

Claim 96. (**Previously Presented**) The liposome of claim 95, wherein Z¹ is OH and Y³ is a group having the formula -C(O)R².

Claim 97. (**Previously Presented**) The liposome of claim 96, wherein Y³ is -C(O)(CH₂)₄CH₃.

Claim 98. (**Previously Presented**) The liposome of claim 87, wherein Z² is -OSi(CH₃)₂C(CH₃)₃, -OSi(PO₄)₂C(CH₃)₃, -C(O)CH₃ or -OC(O)CH₂CH₂CH₃.

Claim 99. (**Previously Presented**) The liposome of claim 1, wherein the bilayer comprises at least about 10 mole percent of the compound having the formula R¹-Y¹-CHZ¹-CH(NY²Y³)-CH₂-Z².